

# PHOTOCURABLE PERFLUOROPOLYETHERS FOR USE AS NOVEL MATERIALS IN MICROFLUIDIC DEVICES

5           This application claims the benefit of U.S. Provisional Patent Application Serial No. 60/505,384, filed September 23, 2003, and U.S. Provisional Patent Application Serial No. 60/524,788, filed November 21, 2003; the disclosure of each of which is incorporated herein by reference in their entireties.

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15           The use of a photocurable perfluoropolyether (PFPE) material for fabricating a solvent-resistant PFPE-based microfluidic device, methods of flowing a material and performing a chemical reaction in a solvent-resistant PFPE-based microfluidic device, and the solvent-resistant PFPE-based microfluidic devices themselves.

|    |           |   |                                     |
|----|-----------|---|-------------------------------------|
| 25 | aL        | = | attoliters                          |
|    | °C        | = | degrees Celsius                     |
|    | cm        | = | centimeters                         |
|    | cSt       | = | centistokes                         |
|    | DBTDA     | = | dibutyltin diacetate                |
|    | DMA       | = | dimethacrylate                      |
|    | DMPA      | = | 2,2-dimethoxy-2-phenylacetophenone  |
| 30 | DMTA      | = | dynamic mechanical thermal analysis |
|    | EIM       | = | 2-isocyanatoethyl methacrylate      |
|    | fL        | = | femtoliters                         |
|    | Freon 113 | = | 1,1,2-trichlorotrifluoroethane      |
|    | g         | = | grams                               |